



Additional chart information may be found in CATP2, Catalog of Nautical Charts.

SECTOR 9 —CHART INFORMATION

SECTOR 9

COCOS ISLANDS, CHRISTMAS ISLAND, HEARD ISLAND, AND MCDONALD ISLANDS

Plan.—This sector describes Cocos Islands (Keeling Islands) and Christmas Island which lie about 1,100 miles WNW and 825 miles NW, respectively, of North West Cape, Western Australia and Heard and McDonald Islands which lie about 2,100 miles SW of Cape Leeuwin, Western Australia.

The general arrangement of each group is from W to E with each island group described under a separate heading.

Note.—**Ile Amsterdam** (37° 51'S., 77° 33'E.), **Ile Saint Paul** (38° 43'S., 77° 33'E.), and **Iles Kerguelen** (49° 16'S., 69° 34'E.) are described in Pub. 171, Sailing Directions (Enroute) East Africa and the South Indian Ocean.

General Remarks

9.1 Sea and swell.—The worst sea and swell conditions are likely to occur between 40° S and 50° S in the Indian Ocean. Sell higher than 4m is present from 30 percent to 70 percent of the time in areas between 50° S and 60° S. The maximum wave height to be expected over this area is about 25m, but that rises to 35m near Iles Kerguelen, about 230 miles NW of Heard Island, in the winter.

Caution.—Icebergs from the Antarctic at times drift into the area of the South Indian Ocean. There is a possibility of meeting icebergs at any time during the year S of 35° S; they are most numerous from October to March.

Cocos Islands (Keeling Islands)

9.2 Cocos Islands (Keeling Islands) (12° 08'S., 96° 50'E.) lie about 600 miles SW of Tanjung Layar, the W extremity of Jawa. They are in two distinct divisions, lying N and S and are separated by a channel 15 miles wide. The N division has a single island known as North Keeling Island while the S division has about 20 islands, known collectively as South Keeling.

South Keeling Island

9.3 This division of the Cocos Islands is formed of about 20 islands and islets. They lie around a central lagoon in the approximate form of a horseshoe with the opening to the NW; the longer dimension is about 8 miles and the shorter about 7 miles. Horsburgh Island, Home Island, and the W end of West Island are reported to be good radar targets.

A reef, against which the sea breaks continually, fronts the outer sides of the islands and protects the enclosed lagoon. Seaward of this reef the depths increase abruptly except off Horsburgh Island. The greater part of the lagoon is filled with patches of growing coral with deep water between them; it is navigable only by shallow draft boats with the aid of local knowledge.

All the islands are low; the highest land is the 12.5m hill on South Island. They are thickly covered with coconut palms

which reach a height of between 12m and 25m above sea level, and can be seen from up to 12 miles.

The land forming South Keeling is evidently rising, and at some time in the future will probably form a circular island with a crater like rim.

Direction Island (12° 05'S., 96° 53'E.), located at the NE corner of the group is about 2.1m high. The concrete pier at the SW side of the island is 27m long and has a depth of 0.1m at its head. The ruins of a house stand on the W extremity of the island. A light is exhibited near the ruins; the light is powered by solar cells and may become weak in overcast weather.

Caution.—The light tower is difficult to distinguish from Port Refuge by day.

9.4 Home Island (New Selma Island) (12° 07'S., 96° 54'E.) ([World Port Index No. 50890](#)) lies about 0.9 mile S of Direction Island and is connected to it by a coral reef that dries in places. Prison Island is conspicuous and lies on this reef. Pulo Gangsa, once an island close N of Home Island, now forms the northern peninsula of the island. Pulo Gangsa has a cemetery on it.

Permission from the Home Island Council must be obtained to visit the island. On the W side of the island is a small boat harbor, protected on the N by a breakwater, in which there are depths of 0.3m to 1.0m. There is a group of 11 islets, accessible only to vessels of light draft, S of Home Island.

South Island (12° 12'S., 96° 55'E.), known locally as Pulau Atas, forms the SE side of the group. Along the E and S sides of the island, is a ridge of sand hills 3 to 6m high, terminating at its S extremity with a hill 12.5m high. Between the W extremity of South Island and the E extremity of West Island are a number of islands, all of which may be seen from the N part of the lagoon and from seaward.

West Island (12° 10'S., 96° 50'E.), known locally is Pulau Panjang, forms the SW side of the group. The reef fringing the SW side of the island was reported (1959) to extend farther seaward than charted. It is impossible to land by boats on the NE side of the island at any rate of the tide. There is an airfield on the island.

A wooden jetty, 93m long with a depth of 2.7m at its head, is located on the E side of West Island, about 0.25 mile SE of Ujong Tanjong, the N extremity of the island. A light was reported to be shown from the head of the pier (1985).

A pipeline extends about 1.25 miles ENE from the E side of the N extremity of West Island. The seaward end of the pipeline and the end of the attached flexible hose are marked by a buoy. Mooring buoys are available. A vessel up to 110m in length, with a draft of 4.1m, can moor here.

A group of masts in the vicinity of the airfield are conspicuous. An aeronautical light is shown from a position about 3 miles S of Ujong Tanjong. Trees obscure the light from some directions. The light may also be extinguished while an aircraft is making its final approach to the airfield.

Between West Island and Horsburgh Island, the NW island of South Keeling, is a gap of 3.5 miles of almost continuous barrier reef.

Turk Reef, on which the sea always breaks, is situated about 1.5 miles N of West Island. The W entrance of South Keeling lies between Turk Reef and the reefs that extend N from West Island. Vessels are advised to stay at least 1 mile from the shore of West Island.

Horsburgh Island (Pulau Luar) (12° 05'S., 96° 50'E.), flat with areas of grass and coconut palms up to 25m high, is the N island of the group. A boat track leads to a landing place about 0.1 mile NW of Possession Point, the SE extremity of the island. This track may best be seen on the chart.

9.5 Port Refuge (12° 06'S., 96° 52'E.), in the N part of the lagoon between Horsburgh Island and Direction Island, comprises an outer and inner harbor. The entrance should be approached with caution, as the bottom rises very steeply from the ocean depth to the 20m curve. The change of color of the water from a dark to a light shade of blue is very marked and it can be seen from some distances and may be relied on as a guide. The bottom is generally visible in Port Refuge where the depth is less than 14.6m.

Tides—Curr ents.—The tides are practically semidiurnal. The mean spring rise is 1.1m while the mean neap rise is 0.9m. The flood current sets S into the harbor at a rate of 0.75 knot, while the ebb current sets NW at a rate of 0.5 knot.

Pilotage.—A pilot boarding station is established in position 12° 07'42"S, 96° 50'36"E, close ENE of the mooring moys.

Anchorage.—The bay formed by the S side of Direction Island provides good shelter and is the recommended anchorage for small craft. The best anchorage for large vessels is at the entrance to Port Refuge, with Direction Island light structure bearing 096° and the E extremity of Pulau Maria bearing 180°, in a depth of about 10m, coral. This anchorage, used by vessels with a maximum draft of 7.6m, is well-sheltered from the predominant SE winds, but is open to winds and swells from the N and NE.

Smaller vessels, with drafts up to 3m, can use an inner anchorage, with Direction Island light structure bearing NE, distant 0.35 mile, in a depth of about 7m.

Vessels may anchor in depths of 8m, sand and coral, about 0.3 mile S of the West Island pipeline mooring position previously described in [paragraph 9.4](#).

Directions.—Lighted beacons, in line bearing 196°, lead through Port Refuge to the track marked by lighted beacons, which leads to the pipeline off West Island. Vessels bound for the inner anchorage should leave the channel when Prison Island bears 120°. Vessels proceeding into the lagoon should enter Port Refuge on the range and proceed along the marked channel; odd numbered light beacons mark the starboard side and even numbered light beacons mark the port side.

It was reported (1986) that the least depth in the channel is 2.8m W of Beacon No. 5. The beacons have been reported to be unreliable.

An alternative track, with a least depth of 4.1m, runs direct from Beacon No. 3 to Beacon No. 8. Vessels, with drafts up to 4.1m and on occasion 4.7m, have used the channel at HW.

Swell affects vessels only in the N part of the channel where the depth is ample.

Local knowledge is recommended for all vessels entering the lagoon.

The Western Entrance lies between a reef which extends N from West Island and Turk Reef about 0.75 mile farther NNE. It is encumbered by numerous coral heads. A narrow channel, with depths of 4.8m, exists through the entrance. Vessels should steer 096° with Beacon No. 8 ahead, then shape course for the anchorage when about 0.2 mile from the beacon.

This entrance is not recommended except with local knowledge. A complete line of breakers forms across the entrance with a moderate ocean swell from NW and N wind.

Caution.—Muirfield Seamount (13° 10'S., 96° 11'E.), with a depth of 18m, lies 70 miles SSW of South Keeling Island.

In 1981, a patch of discolored water was reported about 300 miles SW of South Keeling Island, in position 17° 19'S, 97° 04'E.

North Keeling Island

9.6 North Keeling Island (11° 50'S., 96° 50'E.), 14 miles N of Horsburgh Island, is an atoll, approximately elliptical in shape, about 1.25 miles long in a N and S direction and about 0.5 mile wide. The coral rim encircling the central lagoon, except for a narrow break in the E side, is from 90 to 350m wide. Dense vegetation and coconut trees rise from this coral rim. The island has been reported to be a good radar target at a distance of 16 miles.

Depths—Dangers.—A spit of coral and sand extends 1.5 miles SW from the island, with depths of less than 30m. Heavy rollers rise suddenly at times off the S end of the island, and make the approach dangerous.

Anchorage.—In good weather, anchorage can be obtained 1 mile SW of the S point of the island, in depths of 20m. The only landing place is on the W side of the island, which is normally the lee side. If the wind gets to N of E, this landing place is dangerous. A heavy surf makes landing impracticable at times. The lagoon cannot be entered.

Christmas Island

9.7 Christmas Island (1° 30'S., 105° 40'E.) lies about 530 miles ENE of the Cocos Islands, and about 220 miles S of Tanjung Laya, the W extremity of Jawa. The island is of irregular shape; it is nearly 12 miles between Low Point and Egeria Point, the E and W extremities, respectively, and about 10 miles between Northeast Point and South Point, the NE and S extremities, respectively.

Christmas Island is densely wooded and hilly; it is visible, in clear weather, from distances up to 30 miles. When seen from the N or S, it has the shape of a saddle, with the E and W portions of the island higher than the central portion.

Christmas Island attains a height of 357m in Murray Hill, a summit about 3.25 miles SE of **Northwest Point** (10° 26'S., 105° 35'E.), and a height of 335m in Headridge Hill, which lies about 1.75 miles SSW of Northeast Point.

An aeronautical radiobeacon is located on Christmas Island close SE of Flying Fish Cove.

The shores of Christmas Island consist almost entirely of perpendicular cliffs, from 6 to 24m high. These cliffs have, here and there, been undermined by sea action to form caves,

some of them vented at the top; it is not uncommon to see spray forced through these vents as high as 18 to 21m.

A reef that does not uncover fringes Christmas Island completely.

The reef is steep to all around the island, except in Flying Fish Cove, the only harbor, and off Egeria Point, the SW extremity of the island.

The bottom off the E shore of the island is of a volcanic nature.

9.8 Flying Fish Cove (10° 25'S., 105° 40'E.) ([World Port Index No. 50910](#)) lies at the E end of a bight formed on the N coast of Christmas Island between Northwest Point and Rocky Point, 8 miles ENE. The cove is an indentation at the E end of this bight; it is about 1 mile wide between Rocky Point and Smith Point to the SW. The principal part of the harbor lies between Smith Point and a position about 0.1 mile N of Isabel Beach, which is about 0.6 mile NE of Smith Point.

Vessels must not approach the moorings in Flying Fish Cove closer than 1 mile without instructions.

Winds—Weather.—The wind strength at the reporting station on Christmas Island is much less than the Southeast Trade Wind over the sea around the island. Gale frequency is also low compared with reports from the open sea. Winds of force 7 or more are reported in the vicinity of the island on 1 to 5 percent of occasions in January and February and also from June to September.

The island normally escapes the tropical storms which affect the sea area towards NW Australia. Heavy downpours accompanied by thunderstorms are common, with 250mm of rain having been recorded in one day.

The Northwest Monsoon reaches its S limit in January and February, when W winds predominate.

At times the haze from Australia will reduce visibility to 3 miles.

Tides—Cur rents.—The tidal currents set NE and SW; the SW current sometimes attaining a rate of 1 to 2 knots. Strong and erratic currents are often experienced.

The mean spring tides rise 1.6m. The mean neap tides rise 1.3m.

Depths—Limitations.—The cove is fronted by a coral shelf with white sand, which extends a short distance offshore, with depths of 10m. Outside this depth, the water deepens very rapidly, with depths of 128m about 0.2 mile offshore; the bottom is rocky and uneven.

Cargo working facilities are situated 0.5 mile SSW of Rocky Point, where there are cantilever arms for loading bulk phosphate. Vessels moor at mooring buoys laid in deep water.

Vessels up to 35,000 dwt, with lengths up to 192m and a beam of 28m, can be accommodated at the moorings.

The phosphate mine has closed and bulk exports have been discontinued.

Aspect.—Three prominent oil tanks are situated about 0.2 mile SW of the flagstaff close SE of Smith Point.

Pilotage.—Pilotage is compulsory for merchant vessels. The pilot boards 1 mile W of Smith Point.

Vessels should not approach the moorings nearer than 1 mile until the pilot has embarked.

There is a port radio station at Christmas Island. The vessel's ETA should be sent 48 and 24 hours prior to arrival.

Regulations.—Trading between ship and shore personnel is forbidden, as is consumption of alcohol.

Caution.—Some protection from the Southeast Monsoon (Southeast Trade Winds) is provided by the island. Apart from this, the open nature of Flying Fish Cove provides no shelter. Vessels in imminent danger are unberthed without delay and instructed to lie adrift off the island.

There are no anchorages for merchant vessels. From November to May, the wet season is experienced; N and W winds are frequent during this period. Vessels may be called to lie off the island when conditions are unsafe.

Heard Island

9.9 Heard Island (53° 06'S., 73° 31'E.) lies 2,120 miles SW of Cape Leeuwin, Western Australia, and is under the sovereignty of the Government of Australia. The island is of recent volcanic origin and is about 23 miles long in a NW and SE direction, and about 10 miles wide across its broadest part. The central and main part of the island forms the impressive and almost circular mountain known as Big Ben. From the crater top of this volcano rises Mawson Peak, 2,745m high. Anzac Peak, 715m high, occupies the center of Laurens Peninsula, which is connected to the main island by a low and narrow sandy isthmus.

The Spit, a narrow strip of flat ground, extends 3.5 miles E from the island, beyond which breakers can be seen another 5 miles seaward. In 1983, a shoal depth of 20m was reported to lie 8 miles NE of Spit Point, the E extremity of The Spit.

Permanent ice covers nearly all of this treeless island; in most places, except where diverted by large outcrops of rock, this ice flows down to the sea, terminating in ice cliffs from 15 to 30m high.

Winds—Weather.—In winter, the whole island is under snow, but in summer, the lowest slopes of Laurens Peninsula, the immediate environs of Atlas Cove, Rogers Head, and The Spit are ice-free. On various occasions, smoke has been seen issuing from the summit of Mawson Peak, and in 1950 and 1985, molten lava was observed on the side of the cone. Snow has been observed in every month.

Gales are frequent in all seasons and can arise very quickly; they are generally from the W, but gales from E and N are not uncommon.

The strongest winds blow from NW, with a heavy overcast sky and a falling barometer. They are followed by SW winds, as the barometer rises and the sky clears.

The E winds are accompanied by dull gloomy weather. The best month is December, during which about 15 days of excellent weather may be expected.

In the vicinity of Heard Island and the McDonald Islands ([see paragraph 9.11](#)), fog is frequent, especially with N and NW winds, but with W winds visibility is often good.

Visibility drops below 6 miles about 45 percent to 55 percent of the time year round and below 1.3 miles about 10 percent to 18 percent of the time from May through September.

Skies are cloudy (7/10 cloud cover) on 20 to 30 days per month all year. Clear skies (3/10 cloud cover) can be observed on 1 to 6 days per month.

Tides—Curr ents.—Spring and neap tides rise about 1m.



Meyer Rock (left) with McDonald Island (right) bearing 054° distant 12.5 miles

Red Islet (52° 58'S., 73° 18'E.), 94m high, is the N extremity of Laurens Peninsula, to which it is attached by a narrow neck, and lies 2 miles N of Anzac Peak; shoal water extends 0.5 mile NNW.

Rogers Head (53° 00'S., 73° 24'E.), 4.5 miles SE of Red Islet, is the E entrance point of Atlas Cove and the W entrance point of Corinthian Bay; it is a double-peaked promontory, 145m high, off which submerged rocks extend for a considerable distance.

Saddle Point (53° 01'S., 73° 29'E.), on the N shore of Heard Island, the E entrance point of Corinthian Bay, is located 3.5 miles ESE of Rogers Head. There are a number of above-water rocks off Saddle Point.

Cape Bidlingmaier (53° 01'S., 73° 32'E.) lies 1.5 miles E of Saddle Point. From this cape, the N shore of Heard Island trends ESE of **Spit Point** (53° 07'S., 73° 51'E.), the E extremity of the island.

Caution.—In W winds, there is a strong set towards the spit from both sides.

9.10 Cape Labuan (53° 12'S., 73° 30'E.), about 13.5 miles WSW of Spit Point, is the S extremity of Heard Island. From this cape, the shore trends 10 miles NNW to Cape Gazert, then 4 miles farther NNW to West Cape, the S extremity of Laurens Peninsula.

Shag Islet (52° 55'S., 73° 35'E.), lying 6 miles NNE of Cape Bidlingmaier, is 92m high. It is the largest of three islets in this area.

Sail Rock, 17m high, lies 1 mile NW of Shag Islet and Drury Rock, 37m high, lies 0.5 mile S of the islet.

Morgan Island and Black Rock, together with other submerged rocks, lie up to 0.15 mile offshore, 1.5 miles E of Cape Bidlingmaier.

Off Spit Point, a bank of black mud and sand is reported to extend 20 miles or more.

A shoal, the position of which is doubtful, lies on the N side of the island, 3 miles W of Spit Point.

Wakefield Reef (53° 11'S., 73° 21'E.), on which the sea breaks heavily in rough weather, lies 5 miles WNW of Cape Labuan. Other rocks lie 2 miles ENE of Wakefield Reef and a rock, whose position is doubtful, lies 2 miles NE of the reef.

Pulpit Rock, 55m high, lies close S of Cape Gazert and a rock, whose position is doubtful, lies 3 miles farther S.

Norwegian Rock, with a depth of less than 1.8m and whose position is doubtful, lies 1.25 miles SE of West Cape and a shoal, the existence of which is doubtful, is charted 2 miles SW of West Cape.

Anchorage.—Anchorage may be obtained 1 mile NW of the head of Atlas Cove, in depths of 18m, good holding

ground. The anchorage should be approached by steering 203° with a peak 124m high, close W of Atlas Cove, ahead on that bearing. The anchorage will be found when the spit sheltering the boat harbor in the cove bears 130°.

This anchorage is exposed to the prevailing W swell rolling in from NNW, and in W gales, fierce squalls and gusts of hurricane force, but of short duration, come down from the passes between the mountains of Laurens Peninsula.

Landing on Heard Island is generally difficult, but there is a fine sheltered beach in Atlas Cove on the E side where boats can land near the site of the research station.

There is a food depot in Atlas Cove.

Anchorage can be taken in Corinthian Bay, in a depth of 18m, with Saddle Point bearing about 082° and Church Rock, at the head of the bay, bearing about 147°.

Squalls are usually violent off Rogers Head and until the bay is well-opened. The anchorage, in general, is more secure than that off Atlas Cove, except with winds from the NE quadrant. In W gales, the wind is much steadier and without the extreme turbulence of that in Atlas Cove.

Vessels entering Corinthian Bay should give Rogers Head a wide berth and steer for the center of the bay, with the 210m hill situated 2.5 miles S of Rogers Head ahead bearing 225°, on which course there is a depth of 18m when the two peaks of Rogers Head are almost in line. Landing may usually be made on a sandy beach in the SW corner of the bay.

Anchorage, in SW winds, may be found in Spit Bay under the lee of Stephenson Glacier, at the W end of the bay, in a depth of from 14 to 22m, black sand. Anchorage is judged to be unsafe E of a line drawn 000° from the E extremity of the Stephenson Glacier.

Landing may be made during SW winds on the S side of Spit Bay.

A small hut containing emergency provisions is situated at the top of the beach W of Spit Bay and 9 miles SE of Cape Bidlingmaier; the hut is 75m from the edge of Stephenson Glacier, and between a remarkable square boulder and a water course through a moraine.

McDonald Islands

9.11 The McDonald Islands lie about 23 miles W of Heard Island. The group consists of two small islands and Meyer Rock. The shores of these barren uninhabited islets are formed by precipitous cliffs. The islands are under the sovereignty of the Government of Australia.

McDonald Island (53° 03'S., 72° 35'E.), the largest of the group, is 0.75 mile long and 0.5 mile wide. It consists of two distinct parts, each about equal in area, joined by a narrow

central isthmus. The N half is a sloping plateau, rising from 30m in the SE to 120m in the NW; the S half is a steep-sided hill, 230m high. Each is bound by vertical cliffs, which fall to the sea around most of the hill and around the W and NW side of the plateau.

A promontory extends from the NE side of the island. Access to the island appears to be practicable in good weather

conditions, on the beach at the S end of the island, and on the N promontory.

Flat Island (53° 02'S., 72° 35'E.), 55m high, consists of a plateau from which sheer cliffs fall to the sea, except in the SE corner. The island lies about 90m N of McDonald Island.

Meyer Rock, which lies about 1 mile NW of McDonald Island, rises steeply to 170m and is barren.